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BIOTECHNOLOGY  
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TECH CENTER 1600/2013

## RAW SEQUENCE LISTING ERROR REPORT

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) detected errors when processing the following computer readable form:

Application Serial Number: 09/830,502  
Source: 1600  
Date Processed by STIC: 4/24/2003

THE ATTACHED PRINTOUT EXPLAINS DETECTED ERRORS.

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- 1) INCLUDING A COPY OF THIS PRINTOUT IN YOUR NEXT COMMUNICATION TO THE APPLICANT, WITH A NOTICE TO COMPLY or,
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Applicants submitting genetic sequence information electronically on diskette or CD-Rom should be aware that there is a possibility that the disk/CD-Rom may have been affected by treatment given to all incoming mail. Please consider using alternate methods of submission for the disk/CD-Rom or replacement disk/CD-Rom. Any reply including a sequence listing in electronic form should NOT be sent to the 20231 zip code address for the United States Patent and Trademark Office, and instead should be sent via the following to the indicated addresses:

1. EFS-Bio (<<http://www.uspto.gov/ebs/efs/downloads/documents.htm>> , EFS Submission User Manual - ePAVE)
2. U.S. Postal Service: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450
3. Hand Carry directly to:  
U.S. Patent and Trademark Office, Technology Center 1600, Reception Area, 7<sup>th</sup> Floor, Examiner Name, Sequence Information, Crystal Mall One, 1911 South Clark Street, Arlington, VA 22202  
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U.S. Patent and Trademark Office, Box Sequence, Customer Window, Lobby, Room 1B03, Crystal Plaza Two, 2011 South Clark Place, Arlington, VA 22202
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Revised 04/24/2003



1600

## RAW SEQUENCE LISTING

DATE: 04/24/2003

PATENT APPLICATION: US/09/830,502

TIME: 14:25:05

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Output Set: N:\CRF4\04242003\I830502.raw

3 <110> APPLICANT: Barany, Francis  
 4 Cao, Weiguo  
 5 Tong, Jie  
 7 <120> TITLE OF INVENTION: HIGH FIDELITY THERMOSTABLE LIGASE AND USES THEREOF  
 9 <130> FILE REFERENCE: 19603/2615  
 11 <140> CURRENT APPLICATION NUMBER: 09/830,502  
 12 <141> CURRENT FILING DATE: 1999-10-29  
 14 <150> PRIOR APPLICATION NUMBER: 60/106,461  
 15 <151> PRIOR FILING DATE: 1998-10-30  
 17 <150> PRIOR APPLICATION NUMBER: PCT/US99/25437  
 18 <151> PRIOR FILING DATE: 1999-10-29  
 20 <160> NUMBER OF SEQ ID NOS: 20  
 22 <170> SOFTWARE: PatentIn Ver. 2.1

## ERRORED SEQUENCES

451 <210> SEQ ID NO: 15  
 452 <211> LENGTH: 184  
 453 <212> TYPE: PRT  
 454 <213> ORGANISM: Thermus aquaticus  
 456 <400> SEQUENCE: 15  
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 458 1 , 5 10 15  
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 461 20 25 30  
 E--> 463 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
 464 35 40 45  
 E--> 466 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
 467 50 55 60  
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 470 65 70 75 80  
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 473 85 90 95  
 E--> 475 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
 476 100 105 110  
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 479 115 120 125  
 E--> 481 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
 482 130 135 140  
 E--> 484 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
 485 145 150 155 160  
 E--> 487 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Pro Phe Glu Ala

Does Not Comply  
 Corrected Diskette Needed

pp 1-4, 6-7

Xaas need  
to be explained.  
 See p. 6 for  
 more information

## RAW SEQUENCE LISTING

DATE: 04/24/2003

PATENT APPLICATION: US/09/830,502

TIME: 14:25:05

Input Set : A:\C26151.app

Output Set: N:\CRF4\04242003\I830502.raw

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495 <211> LENGTH: 187
496 <212> TYPE: PRT
497 <213> ORGANISM: Thermus flavus
499 <400> SEQUENCE: 16
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501 1 5 10 15
E--> 503 Glu Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
504 20 25 30
E--> 506 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
507 35 40 45
E--> 509 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
510 50 55 60
E--> 512 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
513 65 70 75 80
E--> 515 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
516 85 90 95
E--> 518 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
519 100 105 110
E--> 521 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
522 115 120 125
E--> 524 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
525 130 135 140
E--> 527 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
528 145 150 155 160
E--> 530 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
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538 <211> LENGTH: 184
539 <212> TYPE: PRT
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544 1 5 10 15
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547 20 25 30
E--> 549 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
550 35 40 45
E--> 552 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
553 50 55 60
E--> 555 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
556 65 70 75 80
E--> 558 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
559 85 90 95

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*same error**same error**see p.3*

## RAW SEQUENCE LISTING

DATE: 04/24/2003

PATENT APPLICATION: US/09/830,502

TIME: 14:25:06

Input Set : A:\C26151.app

Output Set: N:\CRF4\04242003\I830502.raw

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      562                100                105                110
E--> 564 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Leu Glu Glu Ser Gly Xaa Xaa Xaa
      565                115                120                125
E--> 567 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
      568                130                135                140
E--> 570 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
      571 145                150                155                160
E--> 573 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Pro Phe Glu Ala
      574                165                170                175
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      583 <213> ORGANISM: Thermus filiformis
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      587 1                5                10                15
E--> 589 Glu Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
      590                20                25                30
E--> 592 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
      593                35                40                45
E--> 595 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
      596                50                55                60
E--> 598 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
      599 65                70                75                80
E--> 601 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
      602                85                90                95
E--> 604 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
      605                100                105                110
E--> 607 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Leu Glu Glu Ser Gly Xaa Xaa Xaa
      608                115                120                125
E--> 610 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
      611                130                135                140
E--> 613 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
      614 145                150                155                160
E--> 616 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Pro Phe Glu Ala
      617                165                170                175
      619 Asp Gly Val Val Val Lys Leu Asp
      620                180
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      624 <211> LENGTH: 184
      625 <212> TYPE: PRT
      626 <213> ORGANISM: Thermus sp.
      628 <400> SEQUENCE: 19
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      630 1                5                10                15
E--> 632 Glu Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa

```

*same**same**same**p.4*

## RAW SEQUENCE LISTING

DATE: 04/24/2003

PATENT APPLICATION: US/09/830,502

TIME: 14:25:06

Input Set : A:\C26151.app

Output Set: N:\CRF4\04242003\I830502.raw

```

      633          20          25          30
E--> 635 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
      636          35          40          45
E--> 638 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
      639          50          55          60
E--> 641 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
      642 65          70          75          80
E--> 644 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
      645          85          90          95
E--> 647 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
      648          100          105          110
E--> 650 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
      651          115          120          125
E--> 653 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
      654          130          135          140
E--> 656 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
      657 145          150          155          160
E--> 659 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
      660          165          170          175
      662 Asp Gly Val Val Val Lys Leu Asp
      663          180
      666 <210> SEQ ID NO: 20
      667 <211> LENGTH: 184
      668 <212> TYPE: PRT
      669 <213> ORGANISM: Thermus sp.
      671 <400> SEQUENCE: 20
      672 Tyr Thr Val Glu His Lys Val Asp Gly Leu Ser Val Asn Leu Tyr Tyr
      673 1          5          10          15
E--> 675 Glu Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
      676          20          25          30
E--> 678 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
      679          35          40          45
E--> 681 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
      682          50          55          60
E--> 684 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
      685 65          70          75          80
E--> 687 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
      688          85          90          95
E--> 690 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
      691          100          105          110
E--> 693 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
      694          115          120          125
E--> 696 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
      697          130          135          140
E--> 699 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
      700 145          150          155          160
E--> 702 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
      703          165          170          175
      705 Asp Gly Val Val Val Lys Leu Asp

```

*same**same*

**RAW SEQUENCE LISTING**

DATE: 04/24/2003

PATENT APPLICATION: US/09/830,502

TIME: 14:25:06

Input Set : A:\C26151.app

Output Set: N:\CRF4\04242003\I830502.raw

706

180

## VARIABLE LOCATION SUMMARY

DATE: 04/24/2003

PATENT APPLICATION: US/09/830,502

TIME: 14:25:07

Input Set : A:\C26151.app

Output Set: N:\CRF4\04242003\I830502.raw

Use of n's or Xaa's (NEW RULES):

Use of n's and/or Xaa's have been detected in the Sequence Listing.

Use of &lt;220&gt; to &lt;223&gt; is MANDATORY if n's or Xaa's are present.

in &lt;220&gt; to &lt;223&gt; section, please explain location of n or Xaa, and which residue n or Xaa represents.

Seq#:15; Xaa Pos. 18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36  
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**VARIABLE LOCATION SUMMARY**

DATE: 04/24/2003

PATENT APPLICATION: **US/09/830,502**

TIME: 14:25:07

Input Set : **A:\C26151.app**Output Set: **N:\CRF4\04242003\I830502.raw**

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**VERIFICATION SUMMARY**

PATENT APPLICATION: US/09/830,502

DATE: 04/24/2003

TIME: 14:25:07

Input Set : A:\C26151.app

Output Set: N:\CRF4\04242003\I830502.raw

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M:340 Repeated in SeqNo=16  
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L:632 M:340 E: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:19  
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M:340 Repeated in SeqNo=20